

**METHODS FOR IN SITU GENERATION OF NUCLEIC ACID ARRAYS****ABSTRACT OF THE DISCLOSURE**

5           Methods of producing nucleic acid arrays using an *in situ* nucleic acid  
synthesis protocol are provided, where the *in situ* nucleic acid synthesis protocol  
includes a plurality of cycles, each of which includes: (I) a monomer attachment  
step; and (II) a functional group generation step. A feature of the subject  
methods is that the functional group generation step is performed by sequentially  
10   flowing a plurality of different fluids across the surface of a substrate in a manner  
such that the surface is not contacted with a with a triple phase interface line.  
Also provided are the arrays produced using the subject methods, as well as  
methods for use of the arrays and kits that include the same.